**Teaching Simulations Best Practices**

**Abstract**

Instructors are constantly searching for innovative techniques and approaches to bolster student learning. With a history spanning several decades, simulations have garnered significant attention as educators seek to infuse the classroom with realism, rigor, and richness. Drawing on the broader literature and our own experience, we discuss the recurring criticisms students provide as feedback for simulations generally, and our courses in particular. We also discuss some potential pedagogical responses to the criticisms stemming from the extant literature on the case methodology and simulation best practices.

**Keywords:**

Simulations, cases, criticisms

**Introduction**

The purpose of this session is to convene a conversation around teaching simulations, their common student criticisms, and possible solutions. We hope that participants will leave with some new ideas for addressing common student criticisms. The target audience is any instructor teaching business simulations or interested in incorporating simulations in their classroom.

**Theoretical Foundations/Teaching Implications**

While empirical evidence points to the importance and efficacy of business simulations, students can struggle with this unique teaching approach. As such, there is a need to address student concerns in such a way that the pedagogy of business simulations is maintained and accessibility is enhanced. Cadotte and MacGuire (2013) conducted a study of business simulation students at a large public university and highlighted several concerns of students (see below). These concerns parallel our own at both the undergraduate and graduate levels and across different simulations. Based on some of the items presented in Cadotte and MacGuire (2013) and including our own students’ comments from teaching online simulations, we have compiled the following list of student criticisms.

Criticisms of Course/Simulation

1. *Disconnect between course content and the simulation.* Student feedback consistently addresses a perceived disconnect between course content and the functional requirements of business simulations. Students often find it difficult to translate general business principles imparted through traditional pedagogical tools into concrete decision making required of simulations.
2. *Simulation is too time consuming.* Outside of specific guidance given to students about the amount of time to be allocated toward simulate on decisions, students are often critical of the effort required.
3. *Different Levels of Commitment between Team Members.* Students often comment that there are varying levels of commitment to the team elements. Some students are comfortable allocating several hours each week to making decisions, completing assignments, and corresponding. Other students attempt to minimize their commitment.
4. *Fidelity of the Simulation.* Though not as common as the other criticisms, a few students will remark that the simulation does not resemble reality as they understand it. Their understanding and/or experience suggests that the dynamics of the simulation are contrived or, in some cases, completely incorrect.

Criticisms of Instructor Approach

1. *Refusal of instructor to provide specific instructions concerning the simulation.* When students are informed that they will be responsible for making their own decisions and that the instructor will not provide any suggestion that might impart a competitive advantage within the simulation, they often become frustrated. Unlike traditional classroom experiences where instructors often provide detailed answers to student questions, simulation based courses are often not designed for such specific feedback.
2. *Rubrics are unclear.* When provided with grading rubrics students often comment that they are unsure how to interpret the information and that the rubrics do not provide specific advice. It has been our experience that students prefer inventories of specific behaviors and multiple examples of which they can demonstrate to attain certain levels of performance.
3. *Unclear guidance on how to obtain a specific grade.* Some students demonstrate an inordinate preoccupation with achieving a certain grade. Peculiar to simulation based classes, students can often make sound and reasonable decisions with regard to the simulation only to have a competitor outperform them based on some basis they had not considered. In this regard some students will interpret the simulation as subjective, biased, or just plain unfair.

Suggestions for Addressing Student Criticisms

We find that careful, reflective course design might go a long way in addressing most, if not all, of the criticisms listed. It is advisable to periodically reflect on course design, re-evaluate course elements and their execution, and to update content based on current best practices. We offer some suggestions based on the literature and our collective teaching experience to address the criticisms listed above.

1. *Disconnect between course content and the simulation.*
   1. *Case Methodology:* As with most content in higher education, steps will need to be taken to translate textbook material into digestible bites for students to employ in the simulation. Well selected case studies may be uniquely suited to help translate traditional content in terms of the simulation decisions (Ickis, Woodside, Ogliastri, Perez-Bennett, Davidsen, & Lopez, 2014). Textbook cases are often embedded with the key terms and concepts that the authors are trying to convey. Cases could be assigned as individual assignments or as team exercises to connect the chapter content to the simulation.
   2. *Simulation Best Practices:* While simulation based education is thought to result in transformational learning, the reality is that the learning that takes place is incremental (Cadotte, 2016). As such, it is necessary to remind students to continually review the course content through the lens of the simulation with the aid of the simulation tutorials and help files. It is also helpful to intentionally schedule content lessons a priori to simulation decisions, segment the textbook material in specific order, and highlight obvious and non-obvious parallels between content and simulation decisions.
2. *Simulation is too time consuming.*
   1. *Case Methodology:* Instructors employing case studies must be cautious as they will necessarily require more time and effort of students. However, if instructors are careful to outline how case studies support learning and what they can contribute to the students’ performance in the simulation, they will likely be construed as value-added. Perhaps more importantly, well selected and executed cases may result in less time spent on the simulation if students can effectively translate the lessons learned into more efficient decision-making.
   2. *Simulation Best Practices:* Time spent on the simulation should be addressed at the very beginning of the class and will require some fairly straight-forward guidance. As it pertains directly to the simulation, students will need to develop their strategy, analyze data, consult with their teammates, enter their decisions, and then reconvene for feedback at a minimum. It is advisable that the instructor recommend a hard cap for activities directly related to the simulation. Our experience suggests that students will typically take from 1 hour to extreme limits of 10 hours depending on the student, the team, the simulation, and the level. A reasonable amount of time for simulation decisions is between 2 and 3 hours.
3. *Different Levels of Commitment between Team Members.*
   1. *Case Methodology:* There is the possibility that the addition of case studies will increase the stress on a team generally, and on certain students specifically. However, there is evidence to suggest that cases can improve student satisfaction and engagement (Bayona & Castaneda, 2017; Watson & Sutton, 2012). Watson and Sutton (2012) found that students’ learning and engagement can be higher with asynchronous case learning through forums and teams. Our experience suggests that crafting case study assignments with added flexibility can benefit team functioning.
   2. *Simulation Best Practices:* As most simulations require that decisions be made collectively, it is difficult (if not impossible) to disentangle individual contributions. As such, we recommend having students draft an explicit team contract outlining assumptions, responsibilities, expectations, corrective actions, and consequences. This team contract should address preferred methods of communication, expected meeting times, observance of deadlines, grievance procedures, general task assignments, and miscellaneous team characteristics. A template contract addressing many of these elements can be provided by the instructor with the team contributing their own special requirements. In the case that students do not adequately contribute to team performance, students are well aware of the consequences.
4. *Fidelity of the Simulation.*
   1. *Case Methodology:* Rendtorff (2015) states “Currently, the case study has become a method for practical demonstration of theory, but it is also a method that makes knowledge concrete through practical studies of particular cases (p. 37)”. Case studies provide a means of not only connecting theory to practice but providing examples of how actual organizations faced and addressed situations. It is very difficult for students to argue with the fidelity of a simulation when similar dynamics and outcomes can be demonstrated through actual organizational events. Case studies can also be an opportunity for an instructor to point out the complexity of competitive forces and context by arguing how slight deviations could have resulted in different outcomes.
   2. *Simulation Best Practices:* During the introduction of the simulation, pointing out that the simulation is based on significant empirical research and involves content that may be outside the experience of the student can set the stage for student expectations. Also, it is likely that during the debrief sessions between decision rounds that students can draw from the own work experience in interpreting the simulation. Encouraging students to share their experience and to serve as a sounding board for others can lead to better acceptance.
5. *Refusal of instructor to provide specific instructions concerning the simulation.*
   1. *Case Methodology:* Case studies provide an opportunity for instructors to give indirect feedback to students that they could leverage in the simulation. As case studies can be the link between theory and practice (Rendtorff, 2015), they may be particularly well suited to impart lessons in more concrete ways than hypotheticals. Well selected case studies could be the basis for lectures, experiential exercises, or team discussions. Our experience suggests students’ familiarity with cases, the empirical background of cases, and the tangible conversations that can take place around them can alleviate student frustration with the ambiguity of feedback in simulation based courses.
   2. *Simulation Best Practices:*  It is often suggested that instructors should not provide specific advice with regards to the decisions to be made (Cadotte & MacGuire, 2013). Instructors should encourage students to take ownership of their performance and the decisions they are making. Setting expectations at the beginning of the course is paramount in easing student frustrations and encouraging student independence.
6. *Rubrics are unclear.*
   1. *Case Methodology:* Instead of hypothetical scenarios, suggested behaviors, or generalized recommendations, case studies can illustrate specific actions that can be emulated by the students. It has been our experience that students can interpret and recall specific behaviors when they associated them with the larger context a case study provides. Care must be taken to select case studies that offer plenty of examples of quality leadership, ethical behavior, and sufficient context.
   2. *Simulation Best Practices:* Criticisms of grading rubrics are typically the result of sub-optimal student performance and, to a lesser extent, student frustration with ambiguity. Unlike the other pedagogical elements listed, simulation grading rubrics tend to be more quantitative and arguably more objective. In the event that a student does question the legitimacy of the simulation scoring it can be pointed out that the scoring is transparent and applied equally across students and teams.
7. *Unclear guidance on how to obtain a specific grade.*
   1. *Case Methodology:* Case studies provide an opportunity for instructors to demonstrate appropriate work products through sharing exemplars. Providing an example of a competent analysis and question responses to a case study can reduce student anxiety, focus effort and time management, and improve performance.
   2. *Simulation Best Practices:* Students can be referred to the documentation outlining scoring for the simulation, the specified percentages for the simulation described in the syllabus, and references to the other scored elements of the course. To address concerns, it might be advisable to weight the simulation component of the course such that this lack of control is considered. Ultimately, the decision will need to balance student interests, simulation specifics (e.g., available metrics, calculations, context), and overall course design.

**Session Description**

* + 1. Opening (5 Minutes): Greeting and description of session
    2. Background (10 Minutes): Description of criticisms, personal experiences and approach to addressing them.
    3. Case Study (15 Minutes): Discussion of best practices in case study teaching to address student criticisms.
    4. Simulation (15 Minutes): Discussion of best practices in simulation teaching to address student criticisms.
    5. Open Discussion and Closing (15 Minutes): Consulting with session participants on their experiences and attempts to address student criticisms.

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